

ABSTRACT

A method of managing virtual routing forwarding (VRF) tables at a provider edge PE router of a L3 virtual private network (VPN) is provided. An import route target (ImpRT) tree is maintained at the PE router, which keeps the association between all ImpRT attributes currently configured on said PE router and the virtual routing table VRF at that router. When an ImpRT attribute is configured on a VRF table, the PE router first searches the tree to identify a local VRF table that contains a route(s) with that ImpRT attribute. If this information is available locally, the VRF is updated by copying the route information, and there is no need to do a route refresh. When an ImpRT is deleted from a VRF, a route refresh is avoided by parsing all the routes in the VRF and removing the routes that no longer have a matching route target. In an alternative implementation, the local source is the master RIB (routing information base) which includes all routes in all VRFs at the router, and optionally even rejected routes that were filtered out using ImpRTs. In this variant, even routes associated with ImpRTs that are new to the router would be available to update the VRF without requiring a route refresh.